

CLAIMS

What is claimed is:

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A2 1. An oxygen-delivery matrix, comprising a biocompatible matrix comprising a polymer network and a non-gellable polysaccharide, and oxygen.

10 2. The matrix of Claim 1, further comprising at least one active agent.

15 3. The matrix of Claim 1, wherein the biocompatible matrix comprises polyacrylamide.

20 4. The matrix of Claim 1, wherein the non-gellable polysaccharide is guar gum.

5. The matrix of Claim 1, wherein the oxygen is provided by the formation of a closed cell foam by the in situ production of oxygen.

25 6. The matrix of Claim 5, wherein the in situ production of oxygen results from the decomposition of a peroxide such as hydrogen peroxide.

Sub 22 > 7. The matrix of Claim 5, wherein the decomposition of the peroxide is caused by a catalyst.

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6 *8.* The matrix of Claim 7, wherein the catalyst is a carbonate salt.

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7. The matrix of Claim 7, wherein the catalyst is a salt of iodide, manganese dioxide, cupric chloride.

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10 *10.* The matrix of Claim 7, wherein the catalyst is an enzyme such as catalase.

catalyst.

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11 *11.* The matrix of Claim 1, further comprising a catalyst.

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12. The matrix of Claim 1, wherein the biocompatible polymer is a natural polymer.

13. A method for treating compromised tissue comprising,

20 placing a biocompatible matrix on the compromised tissue.

14. The matrix of Claim 13, further comprising at least one active agent. *D*

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15. The matrix of Claim 13, wherein the biocompatible matrix comprises polyacrylamide.

16. The matrix of Claim 13, wherein the non-gellable polysaccharide is guar gum.

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17. The matrix of Claim 13, wherein the oxygen is provided by the formation of a closed cell foam by the in situ production of oxygen.

5 18. The matrix of Claim 17, wherein the in situ production of oxygen results from the decomposition of a peroxide such as hydrogen peroxide.

10 19. The matrix of Claim 17, wherein the decomposition of the peroxide is caused by a catalyst.

20. The matrix of Claim 13, further comprising a catalyst.

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